Comparative estimation of Marmelosin from *Aegle marmelos* (L.) Correa fruits using HPTLC and HPLC.

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ABSTRACT:

Aegle marmelos (L.) Correa (Rutaceae) popularly known as 'Bael' is an important major fruit crop of India. Fruits contains therapeutically active phytoconstituents like Eugenol, Lupeol, citronellal, aurapten, cuminaldehyde, psoralen and marmelosin . Fruits are used as a remedy for dysentery, heart tonic, brain tonic and diabetes and are a part of many herbal and ASU formulations. Marmelosin being the major active principle and largely responsible for many therapeutic activities, is recognized as a bioactive marker.

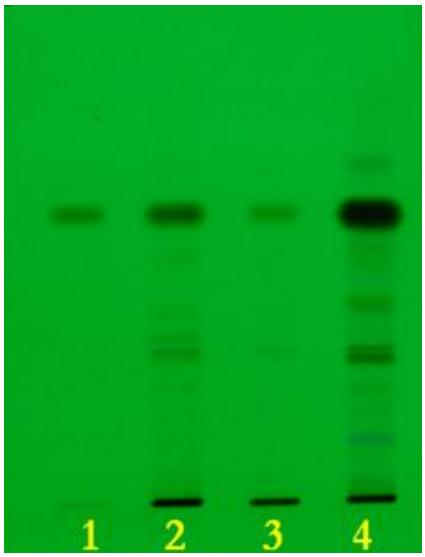
In the present research work, quality of fruits *Aegle marmelos* was assessed using modern scientific analytical tools. HPTLC and RP-HPLC methods were developed and validated for phytochemical characterization and quantitation of marmelosin from fruit pulp of *Aegle marmelos*. The developed methods were further applied to quantitate this marker from different plant parts, various ASU formulations and also to elucidate the variations in fruits collected from different geographical regions. Pharmacokinetic studies were carried out on Albino Wistar rats to study the ADME pattern of Marmelosin using HPTLC technique.

The developed HPTLC and RP-HPLC methods can be used for authentication of *Aegle marmelos* fruits and for quantitation of this marker from various plants and related ASU formulations. Pharmacokinetic studies of *Aegle marmelos* can form a baseline for making formulations to determine the pharmacological activity and bioavailability of marmelosin leading to possible extrapolation to clinical trials.

Key words: *Aegle marmelos*, marmelosin, chromatography, quantitation, pharmacokinetics.

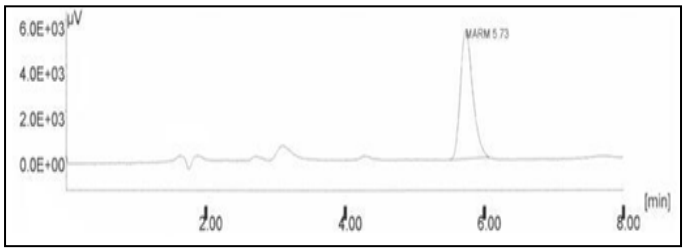
Fig 1: Chromatographic profiles of Marmelosin from *Aegle marmelos* fruits collected from different geographical regions of India.

HPTLC

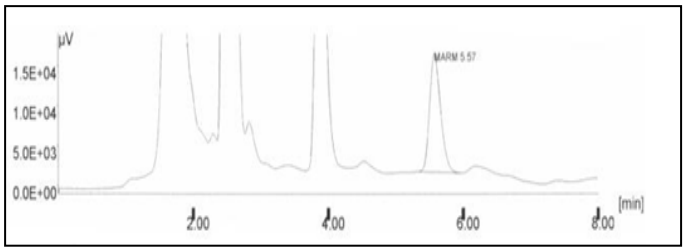


Track 1 : Marmelosin
Track 2 : Pune
Track 3 : Mumbai
Track 4 : Uttar Pradesh

HPLC



HPLC Chromatogram of Marmelosin



HPLC Chromatogram of Marmelosin from *Kutajadi Vati* (Ayurvedic formulation)